The State of New Hampshire
DEPARTMENT OF ENVIRONMENTAL SERVICES

Robert R. Scott, Commissioner

WATER CONSERVATION PLAN AND WAIVER APPROVAL

May 21, 2018

Ivy Hernandez
NIC 15 Kirkwood Corners Owner, LLC
1345 Avenue of the Americas
45th Floor
New York, NY 10105
ihernandez@fortress.com

Transmitted via Email

Subject: **Lee – Kirkwood Corners Senior Living (PWS ID #: 1334010)**
Water Conservation Plan, NHDES # 950052

Dear Ms. Hernandez:

On April 17, 2018, the New Hampshire Department of Environmental Services ("DES") Drinking Water and Groundwater Bureau received a Water Conservation Plan (the "WCP"), signed on April 17, 2018, for Kirkwood Corners Senior Living located in Lee, New Hampshire. Pursuant to RSA 485:61 and Env-Wq 2101, community water systems seeking permits from DES for new sources of groundwater shall submit a water conservation plan to DES. Based on review of the WCP, DES has determined the WCP complies with Env-Wq 2101, *Water Conservation* rules.

Pursuant to Env-Wq 2101, the Town of Lee and the Strafford Regional Planning Commission were provided a copy of the WCP, along with other required materials.

On April 17, 2018, DES received a waiver request to Env-Wq 2101.16(a) and Env-Wq 2101.16(b) *Minimization of Water Loss and Water Waste for Specified Systems*, signed on April 17, 2018, in accordance with Env-Wq 2101.23. The waiver was requested because the system consists of a single building with a historically stable total population and to avoid the cost of installing a water meter after treatment. To meet the intention of the rules, the system proposed to conduct an analysis of the average daily use ("ADU") using the source meter readings at least once a month and take specific actions to investigate and address water loss and waste when the ADU threshold is exceeded.

DES approves the WCP and the waiver request based on the following conditions (Note* This Water Conservation Plan and Waiver Approval is an after-the-fact approval for an existing system and all conditions are considered active upon the date of this Approval unless otherwise specified.):

1. Meters shall be installed on all existing and future sources.

2. All meters shall be read monthly—no sooner than 27 days and no later than 33 days from the last meter reading.

3. All meters shall be installed per the manufacturer's instructions or American Water Works Association standards.

4. All meters shall be tested and maintained based on the schedule proposed in the WCP.

5. A leak detection and repair program shall be implemented in accordance with the WCP, including average daily use analyses conducted monthly.

6. Leaks shall be repaired within 60 days of discovery.

7. All new non-metallic pipes installed in the system shall be outfitted with detectable tracer tape or detectable tracer wire, or be GPS located and maintained in a GIS system.

8. Within one year of this approval, a water conservation outreach and education program shall be implemented in accordance with the WCP, including educating staff at the facility.

9. The system shall report monthly source production volumes to the DES Water Use Registration and Reporting Program on a quarterly basis. DES has assigned **WUID 21033** to the facility. The first quarter report due is **Quarter 2 2018**. The reporting period opens July 1 and is due 45 days from the end of the reporting period. The water system shall register as a data provider and utilize the DES OneStop reporting tool to submit water use data. Instructions for using the tool are enclosed with this letter. If you have any questions about water use reporting or registering as a data provider, please contact Stacey Herbold by phone at (603) 271-6685 or by email at stacey.herbold@des.nh.gov.

10. The primary operator, Christian Kofer, for Kirkwood Corners Senior Living is already an authorized data provider for at least one other facility. If you retain Mr. Kofer to report to the Water Use Registration and Reporting Program for your system, please contact Stacey Herbold by phone at (603) 271-6685 or by email at stacey.herbold@des.nh.gov to provide authorization.

11. Every three years from the date of this approval, a *Water Conservation Plan Ongoing Compliance Reporting Form* shall be submitted to DES documenting how the system has maintained compliance with the WCP. The following records shall be maintained by the water system to include with the report:

    a. Date of installation and replacement of all meters as well as testing and calibration records.

    b. A log of the average daily use analyses, including whether the 2,500 gallons per day threshold was exceeded and the associated leak repair activities.

    c. Number/Inventory of fixtures and appliances replaced during the reporting period.

    d. A log of water conservation outreach activities, including the dates of staff meetings where water conservation measures were mentioned and a summary of the outreach materials posted within the building.

12. In accordance with the WCP, as the building is renovated or fixtures and appliances are replaced, ENERGY STAR and WaterSense certified models shall be installed.

13. The waiver shall be valid for no more than four years from the date of this approval. Prior to the expiration of the waiver, a waiver request shall be sought in order to be considered an extension of the original waiver approval.

14. Proposed changes to the WCP shall not be implemented unless approved by DES.

The *Water Conservation Plan Ongoing Compliance Reporting Form* may be located by going to the DES website (www.des.nh.gov), clicking on the "A-Z List" in the top right corner of the page, clicking "Water Conservation," and scrolling down to "Forms/Applications."

Please feel free to contact me with any questions at (603) 271-0659 or via e-mail at kelsey.vaughn@des.nh.gov.

Sincerely,

Kelsey Vaughn

Kelsey Vaughn
Water Conservation Program
Drinking Water and Groundwater Bureau

Attached: (2) Water Use Registration Guidance and Water Use Reporting Guidance

ec: Stephanie Barker; Blue Harbor Senior Living
Christian Kofer; Aqua Specialties, LLC
Town of Lee
Strafford Regional Planning Commission
Cindy Klevens, Steve Roy, Andrew Koff, Stacey Herbold; DES

WATER CONSERVATION PLAN: **Kirkwood Corners**

Kirkwood Corners is considered an existing small community water system as well as an Industrial, Commercial, Institutional (ICI) water user. In February 2017, Kirkwood Corners became a public water system and has been pursuing appropriate New Hampshire Department of Environmental Services (NHDES) approvals, including this water conservation plan, which was submitted for approval to demonstrate how the water system proposes to comply with water conservation standards pursuant to Env-Wq 2101, *Water Conservation* rules.

Activities outlined in the water conservation plan will be completed by water system personnel under the supervision of a certified water system operator.

Note: A waiver is being requested to the leak detection requirements for existing small systems. The system has proposed to complete an analysis of the average daily use at least monthly rather than installing service meters, billing based on water use, and calculating a water balance; performing an acoustic leak detection survey; or conducting a night flow analysis.

I. Introduction

A. Contact Information

1. Name and location of system: Kirkwood Corners, 206 North River Road, Lee, NH

2. Owner of system and mailing address: Blue Harbor Senior Living, 222 SW Columbia Street, Suite 750, Portland, OR 97201

3. Name and mailing address of preparer of water conservation plan: Stephanie Barker, Kirkwood Corners, 206 North River Road, Lee, NH 03861

B. System Overview

1. Brief description of the community being served:

Kirkwood Corners is a senior living community providing assisted living/memory care/respite care services. It consists of one building with 28 rooms/units (24 private, 4 shared) for a historically consistent population of 32 residents and 12 full-time staff members. The original part of the building was built in the 1700s and renovated when an addition was built in the 1990s. Construction began in 1992 or 1994 and finished in 1996. The facility was opened in 1998. Blue Harbor Senior Living bought the facility in 2014.

2. Description of water sources, including water sources to be developed for non-potable uses such as irrigation: The system is supplied by one bedrock well located 105 feet southwest of the older section of the building (across the street). The source meter and treatment are located in the basement of the building.

3. Name designation of each proposed water source and any existing sources: BRW1

4. Number of connections proposed for each of the following classes:
    a) Residential: 1
    b) Industrial/Commercial/Institutional: 0

c) Municipal: 0

5. The water system does not provide water to any consecutive water systems or privately-owned redistribution systems.

6. There are no proposed connections that receive more than 20,000 gpd.

7. Please provide the following information based on metered source withdrawal volumes from the last complete year. Please report in gallons.

Year: 2017
Average daily use (ADU): approx. 1,500 gpd
Lowest ADU in the winter: Meter was installed in March 2017 (previously unmetered)
Highest ADU in the summer: 2,067 gpd

C. Transfer of Ownership

1. The system ownership is not proposed to be transferred.

II. System Side Management

A. Water Meters

1. Source Meters

a) No later than the source activation date, meters will be installed on each new and any existing water source.

b) An irrigation well is not proposed.

c) Source meter information for the existing source:

Source Name: BRW1
Source Meter Make: Elster
Source Meter Model: C700
Source Meter Size: 5/8”
Source Meter Installation Date: 3/15/17

d) No later than the source activation date, source meters will be read at least every 30 days. Currently, maintenance personnel read the source meters at least once a week.

2. Meter Selection, Installation and Maintenance

a) All meters will be American Water Works Association (AWWA) certified, with the exception of b), below.

b) AWWA does not have standards for magnetic flow meters. If a magnetic flow meter is proposed, the meter make, model, size and manufacturer specifications will be forwarded to the NHDES Water Conservation program for review. The meter will not be installed until receiving approval for its use from NHDES.

c) The selected size of the meters will be based on projected flow rates.

d) Meters will be installed as specified by the manufacturer, including requirements for horizontal or vertical placement, distance of straight run of pipe upstream and downstream of the meter and strainer installation. If the manufacturer does not supply installation specifics, meters will be installed in accordance with the "Manual of Water Supply Practices M6, Water Meters-Selection, Installation, Testing, and Maintenance" (AWWA, 2012).

e) The following meter testing and calibration schedule or meter change-out schedule will be implemented. If the manufacturer's accuracy warranty extends beyond the schedule below, the meter will be tested or changed-out no later than the warranty expiration date.

Meter Size (inches)	Testing Rate (years)
<1"	10 yrs
1" - 2"	4 yrs
3"	2 yrs
>3"	1 yr

f) A log of the date meters were installed, tested, calibrated, repaired and replaced will be maintained. Calibration certificates will be kept on file.

B. Pressure Management

1. The design pressures of the system are from 40 psi to 60 psi.

C. Leak Detection and Repair

1. Leak detection methodologies will be conducted in accordance with the "Manual of Water Supply Practices M36, Water Audits and Loss Control Programs" (AWWA, 2016).

2. Leaks will be repaired within 60 days of discovery unless a waiver is obtained in accordance with Env-Wq 2101.23.

3. A log of all leaks will be maintained, including the date the leak was discovered, the date the leak was repaired, the type of leak (ex. service, main, hydrant, valve), the size of the leak (gpm) and the nearest street address to the leak.

D. Leak Detection Methodology

1. Average Daily Use Analysis

a) The average daily use (ADU) analysis will be conducted at least every month.

b) The ADU will be calculated using the source meter readings.

c) If the ADU is greater than 2,500 gallons per day (334 cubic feet per day), daily readings will be taken for two days.

(1) If the ADU remains above 2,500 gallons per day (gpd), a leak will be suspected.

(a) Maintenance staff will investigate for leaks in the building, including running toilets, leaky faucets, and loose fittings.

(b) The daily readings and leak inspection activities will continue until the ADU is less than 2,500 gpd.

d) Records will be maintained of each ADU analysis, including whether the 2,500 gpd threshold was exceeded and the leak repair activities.

III. Consumption Side Management

A. Current Water Use

1. Treatment

a) Backwash from the water softener discharges at approximately 5 gpm or 100 gpd.

2. Outdoor

a) There is no outdoor irrigation—just faucets for hand-watering.

3. Heating/Cooling

a) Two boilers are used for heat and hot water and run on a closed loop. Central air and window units are used for cooling.

4. Sanitary

a) Bathrooms

(1) All toilets are tank-type (equipped with a tank that stores and dispenses water to a bowl when flushed). Two toilet tank lids were removed in the upstairs bathrooms in February 2018. One had “August 1996” engraved on the inside of the tank and the other had “01 SEP 96” engraved.

(2) The flow rates were measured in two bathrooms in March 2018. The faucet flow rates were 1.2 gpm and 0.8 gpm. The showerhead flow rates were 1.5 gpm and 1.0 gpm.

(3) Inventory:

<u>Upstairs:</u>
5 bathrooms with shower, toilet, sink
1 bathroom with tub, toilet, double sink

Downstairs:
4 bathrooms with toilet, sink
3 bathrooms with shower, toilet, sink
1 bathroom with tub, toilet, sink
1 shampoo/hair-washing station with 1 sink
1 sink with faucet

Basement:
1 sink with faucet

b) Kitchen

(1) Inventory:

1 Pre-Rinse Spray Valve
2.5 gpm at 50 psi
Make: Encore Professional Plumbing under Component Hardware Group, Inc. (WaterSense Partner)

1 Prep Sink with Faucet
2.2 gpm

1 Eye-Wash Station/Hand-Washing Sink with Faucet

1 Dishwasher
Make: KROMO
Model: DUPLA 50 USA
Serial Number: DWH1022717
ENERGY STAR certified
Manufactured in 2014

1 Ice Machine
Make: Manitowoc
Model: NEO
2 years old
Produces cubes
1 line in with drain (not constant)

c) Laundry

(1) Inventory:

1 Sink with Faucet

1 Washing Machine
Make: Whirlpool
Model: WTW7000DW0
Serial Number: C53271102
Used for housekeeping and clothing protectors (bibs)

1 Washer/Extractor
Make: Speed Queen
Model: SCN040KNFXU2001
Serial Number: 1603042174
40 lb capacity
Top load
ENERGY STAR certified
Installed in 2017
Used for sheets and towels

B. Water Efficiency Practices

1. Existing Water Efficiency Practices

a) Staff notify maintenance personnel of suspected leaks and leaky fixtures. Most staff use the TELS reporting system, which notifies maintenance personnel via email. Housekeeping staff notify maintenance personnel directly.

2. Proposed Water Efficiency Practices

a) Blue Harbor Senior Living plans to upgrade all bathrooms over the next few years. Water-using fixtures will be WaterSense certified. WaterSense certified products include toilets, urinals, faucets, and showerheads. Products may be found at: https://www.epa.gov/watersense/product-search.

b) As water-using fixtures, appliances, and equipment are replaced, WaterSense certified and/or ENERGY STAR certified products will be installed. A list of ENERGY STAR certified products may be found at: https://www.energystar.gov/products.

c) Water efficiency practices for institutions, kitchens, laundry facilities, and outdoor uses will be used as described in the following:

-NHDES Fact Sheet DWGB-26-10 (Water Efficiency: Laundry Facilities):
https://www.des.nh.gov/organization/commissioner/pip/factsheets/dwgb/documents/dwgb-26-10.pdf
-NHDES Fact Sheet DWGB-26-13 (Water Efficiency: Institutions):
https://www.des.nh.gov/organization/commissioner/pip/factsheets/dwgb/documents/dwgb-26-13.pdf
-NHDES Fact Sheet DWGB-26-14 (Water Efficiency: Health Care Facilities):
https://www.des.nh.gov/organization/commissioner/pip/factsheets/dwgb/documents/dwgb-26-14.pdf
-NHDES Fact Sheet DWGB-26-16 (Water Efficiency: Business or Industry Water Use and Conservation Audit):
https://www.des.nh.gov/organization/commissioner/pip/factsheets/dwgb/documents/dwgb-26-16.pdf
- EPA Guide "WaterSense at Work: Best Management Practices for Commercial and Institutional Facilities":
https://www.epa.gov/sites/production/files/2017-02/documents/watersense-at-work_final_508c3.pdf

C. Educational Outreach Initiative

1. No later than one year from the date of final source approval, Kirkwood Corners will implement water conservation outreach by educating staff at the facility. Water conservation information will be posted in the break room, reminding staff of water conservation tips. An agenda item will be added to the annual in-service meeting with all staff to remind staff of the importance of water conservation and the notification process for suspected leaks or leaky fixtures.

a) Information contained in EPA WaterSense materials located at http://www.epa.gov/watersense/ or NHDES Water Efficiency Fact Sheets located at http://des.nh.gov/organization/commissioner/pip/factsheets/dwgb/index.htm#efficiency will be used as reference materials.

2. The system will maintain a log indicating how the system has complied with III. C.1., above. The log will include dates the outreach and education actions were taken and what was done.

IV. Reporting and Implementation

A. The water system will submit a form supplied by NHDES once every three years from the date of the water conservation plan approval documenting how compliance with the requirements of Env-Wq 2101, *Water Conservation* rules, is being achieved.

B. The water system will report monthly production volumes quarterly to the NHDES Water Use Registration and Reporting Program upon receiving a Water Use ID number from NHDES. Monthly means once every calendar month, but no sooner than 27 days after and no later than 33 days after the previous reading.

I certify that I have read this Water Conservation Plan, understand the responsibilities of the water system as referenced in the plan, and that all information provided is complete, accurate, and not misleading.

Owner Name (print): Stephanie Barker

Owner Signature: Stephanie Barker Digitally signed by Stephanie Barker DN: cn=Stephanie Barker, o=Kirkwood Corners, ou, email=kirkwood.ed@blueharborsl.com, c=US Date: 2018.04.17 09:43:05 -04'00' Date: 4/17/2018

Appendix A
Definitions

Authorized metered consumption: billed metered water plus unbilled metered water.

Community water system (CWS): a public water system which serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents.

Consecutive water system: a public water system that buys or otherwise receives some or all of its finished water from one or more wholesale systems for at least 60 days per year.

Final source approval: the date of final well siting approval or the date of issuance of the large groundwater withdrawal permit.

Large community water system: a community water system that serves more than 1,000 persons.

Privately owned redistribution system (PORS): A system for the provision of piped water for human consumption which does not meet the definition of a public water system and meets all of the following criteria:

(1) Obtains all of its water from, but is not owned or operated by, a public water system; (2) serves a population of at least 25 people, 10 household units or 15 service connections, whichever is fewest, for at least 60 days per year; and (3) has exterior pumping facilities, not including facilities used to reduce pressure, or exterior storage facilities which are not part of building plumbing.

Public water system (PWS): a system for the provision to the public of piped water for human consumption, if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.

Small community water system: a community water system that serves 1,000 people or less.

Source activation date: the date the source is placed into use.

System input volume: the volume of water input to the water supply system after treatment, analysis and storage.

Water balance: the difference between the system input volume and authorized metered consumption.

Water conservation: any beneficial reduction in water losses, waste or use.

Wholesale system: a public water system or an industrial, commercial or institutional (ICI) water user that treats source water and then sells or otherwise delivers finished water to a consecutive water system or privately owned distribution system.

Appendix B
Notification Process

Public Notification Instructions

Once a final draft of the water conservation plan is agreed upon by the applicant and NHDES, NHDES will send a signature line to the applicant for addition to the plan along with a summary of the requirements of Env-Wq 2101, *Water Conservation* rules. Within 10 working days of receiving the summary from NHDES, the applicant is required to provide a copy of the water conservation plan via certified mail with return receipt requested to the governing board of the municipality in which a proposed source is located, all municipalities that will receive water from the water system (if any), all wholesale customers (if any) and the regional planning commission serving the location of the proposed source. In most cases, only the municipality and the regional planning commission will require notification. All signed copies of the certified mail return receipts (the green cards) must be forwarded to NHDES along with the final, signed water conservation plan.

Additional Attachments

The applicant must provide the governing boards with a summary of the requirements of Env-Wq 2101, which may be found at http://des.nh.gov/organization/divisions/water/dwgb/water_conservation/index.htm, and request that the governing board amend local site planning requirements to reflect the requirements of Env-Wq 2101 or to promote water efficiency.

Notification of Consecutive Water Systems and Privately Owned Redistribution Systems

Within 5 working days of obtaining final approval of the source from NHDES, the system is required to notify any consecutive water system or privately owned redistribution system receiving water from the system, that pursuant to Env-Wq 2101.13, the systems must implement a water conservation plan and should contact the NHDES Water Conservation Program using the contact information below.

Kelsey Vaughn, Water Conservationist
New Hampshire Department of Environmental Services
Drinking Water and Groundwater Bureau
PO Box 95
Concord, NH 03302-0095
kelsey.vaughn@des.nh.gov
Phone: (603) 271-0659
Fax: (603) 271-0656